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Kotlow et al.

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(54) **METHOD FOR DETERMINING LAUNCH SYSTEM VELOCITY, ACCELERATION AND DISPLACEMENT CERTIFICATION PARAMETERS**

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(57) **ABSTRACT**

A method is provided to process system test data to determine certification parameters of the system based on the test data. For a torpedo launch system, the velocity data is generated by a Pressure/Velocity/Displacement housing interfaced with a computer based data acquisition system and known launch system and test parameters, such as sample rate, muzzle exit length, time of acquisition, decimation factor and low pass cutoff frequency are provided as inputs. The method forces assigns a value of zero to any data less than a predetermined threshold in order to eliminate non-zero levels contributed by ambient noise. The method then passes the data through a filter chosen to agree with hand fit smoothing methods, so as to obtain a smoothed velocity profile. The smoothed data is processed to obtain and display an acceleration profile and a displacement profile, as well as data points for peak acceleration, time at peak, acceleration pulse width, muzzle exit velocity and time at exit.

14 Claims, 4 Drawing Sheets

